HSC Statistical Brief

The Burden of Arthritis in West Virginia, 2003
Brief No. 14

Arthritis, one of the most common conditions reported by the American population, actually comprises more than 100 diseases that involve the joints, the tissues that surround the joints, and other connective tissue. Affecting approximately 43 million Americans, it is the leading cause of disability in the United States, causing some level of activity limitation in nearly one in six affected, or more than 7 million people. It is estimated that by 2020, 60 million Americans, almost 20% of the population, will be affected by arthritis. Of these, one-fifth (12 million) will suffer activity limitations.

COSTS. In 2004, the Centers for Disease Control and Prevention (CDC) published estimates of the direct (medical care expenditures) and indirect (value of time lost from work among persons aged 18-64) costs of arthritis and other rheumatic conditions (AORC) in the United States in 1997. Data from the 1997 Medical Expenditure Panel Survey and the 2002 Behavioral Risk Factor Surveillance System (BRFSS) were used to calculate the estimates. The total costs in the nation in 1997 were estimated at $86.2 billion ($51.1 billion in direct costs and $35.1 billion in indirect costs). State-specific estimates were also generated: **in West Virginia, a total of $750 million was expended in 1997 on AORC, $445 million in direct medical costs and $305 million in indirect costs.**

PREVALENCE. The 2003 West Virginia BRFSS survey included several questions on arthritis and other rheumatic conditions. Over half of the respondents aged 18 and older (55.9%) reported symptoms of pain, aching, or stiffness in or around a joint (not including neck or back) during the previous 30 days. Of those, the symptoms of 84.5% had begun more than three months prior to the interview.

All respondents were then asked "Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?" Thirty-seven percent (37.2%) of West Virginia adults (an estimated 529,169 individuals) answered "yes" to this question, the highest rate among the 50 states, the District of Columbia, and the three territories that participated in the 2003 BRFSS. The state rate was significantly higher than that for the United States as a whole (27.1%; 95% CI: 26.8, 27.4). No significant difference was reported in the state by gender; 34.9% of men had AORC, compared with 39.3% of women. The rate of being diagnosed with AROC increased with

age, from 7.4% of respondents aged 18-24 to 62.2% of those aged 65 and older. Adults with less education and lower incomes were more likely than others to have AORC. Table 1 below presents the prevalence of arthritis and other rheumatic conditions by gender, age, education, and income.

Table 1. Prevalence (%) of Arthritis and Other Rheumatic Conditions among Adults West Virginia Behavioral Risk Factor Surveillance System, 2003

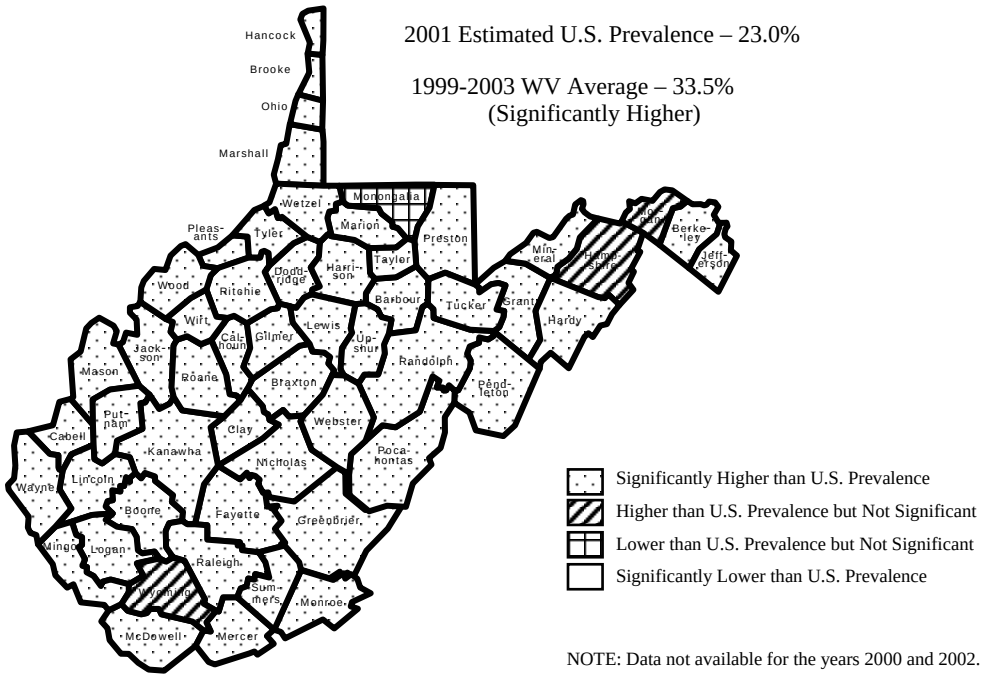
Characteristic	Men			Women			Total		
	# Resp.	%	95% CI	# Resp.	%	95% CI	# Resp.	%	95% CI
TOTAL	1,313	**34.9**	(32.1-37.8)	2,016	**39.3**	(37.0-41.7)	3,329	**37.2**	(35.4-39.0)
Age									
18-24	91	**6.4**	(0.8-12.1)	111	**8.3**	(2.9-13.8)	202	**7.4**	(3.4-11.3)
25-34	186	**20.4**	(14.0-26.8)	268	**15.3**	(10.6-20.0)	454	**17.8**	(13.9-21.8)
35-44	234	**30.0**	(23.6-36.3)	320	**27.1**	(21.7-32.5)	554	**28.5**	(24.3-32.7)
45-54	282	**41.0**	(34.7-47.2)	386	**40.5**	(35.3-45.7)	668	**40.7**	(36.7-44.8)
55-64	248	**49.7**	(43.0-56.4)	395	**60.4**	(55.2-65.6)	643	**55.1**	(50.9-59.4)
65+	271	**56.3**	(50.0-62.6)	525	**66.3**	(61.9-70.7)	796	**62.2**	(58.6-65.9)
Education									
Less than H.S.	245	**46.0**	(38.7-53.3)	390	**55.0**	(49.5-60.5)	635	**50.6**	(46.0-55.2)
H.S. or G.E.D.	524	**34.4**	(30.0-38.8)	787	**40.0**	(36.2-43.7)	1,311	**37.3**	(34.4-40.2)
Some Post-H.S.	263	**31.0**	(25.0-37.0)	473	**35.0**	(30.3-39.8)	736	**33.3**	(29.5-37.0)
College Graduate	278	**29.1**	(23.5-34.8)	365	**27.3**	(22.4-32.1)	643	**28.2**	(24.5-32.0)
Income									
Less than $15,000	171	**51.1**	(42.3-59.9)	354	**50.6**	(44.6-56.5)	525	**50.8**	(45.7-55.9)
$15,000- 24,999	259	**43.6**	(37.0-50.1)	458	**44.2**	(39.2-49.3)	717	**43.9**	(39.9-48.0)
$25,000- 34,999	193	**38.4**	(31.0-45.9)	268	**37.8**	(31.5-44.1)	461	**38.1**	(33.2-42.9)
$35,000- 49,999	211	**34.1**	(27.3-41.0)	266	**36.2**	(29.9-42.4)	477	**35.1**	(30.4-39.7)
$50,000- 74,999	168	**29.2**	(21.9-36.5)	225	**24.4**	(18.4-30.5)	393	**26.8**	(22.0-31.6)
$75,000+	183	**21.6**	(15.0-28.2)	146	**21.5**	(14.8-28.2)	329	**21.6**	(16.7-26.5)

Arthritis prevalence data from the 1999, 2001, and 2003 BRFSS surveys were aggregated to provide county prevalence rates. McDowell County had the highest rate at 48.1%, while Monongalia County had the lowest rate (18.7%). The map on the following page illustrates the prevalence of AORC by county. (Individual county rates are found in Appendix A.)

LIMITATIONS. Arthritis-related limitations were ascertained through two additional BRFSS questions. Thirty-six percent (36.3%) of respondents who reported having had joint pain for at least three months answered "yes" to the question "Are you now limited in any way in your usual activities because of arthritis or joint symptoms?" This was the fourth highest rate among the 54 BRFSS participants; the national prevalence was 29.7% (95% CI: 29.3, 30.2). Thirty-two percent (31.6%) of respondents who reported having had joint pain for at least three months and were aged 18 through 64 said "yes" when asked "Do arthritis or joint symptoms now affect where you work, the type of work you do, or the amount of work you do?" This rate was the fifth highest in the nation, where the overall rate was 26.0% (95% CI: 25.5, 26.6). Thirty-five percent (35.0%) of state men reported activity

limitation, compared with 37.5% of women; 32.4% of men had some work limitation, compared with 30.8% of women. These differences were not statistically significant. In general, activity and work limitations increased with age and decreased with increasing education and income. Table 2 on page 4 presents the prevalence of arthritis-related limitations by gender, age, education, and income.

Prevalence of Arthritis and Other Rheumatic Conditions by County
WVBRFSS, 1999, 2001, 2003



HOSPITAL DISCHARGE RECORDS. Hospital discharge data[1] provide an additional perspective in the attempt to understand the prevalence of a condition and the burden it imposes on society. For this brief, hospital discharges having a diagnosis of rheumatoid arthritis (ICD-9 codes 714.0-714.9) or osteoarthrosis and allied disorders (ICD-9 codes 715.0-715.9) were examined using data obtained from the Health IQ2003 website[2] provided by the West Virginia Health Care Authority. In 2003, out of a total of approximately 298,448 discharges, an estimated 23,444 had arthritis as either a principal or secondary diagnosis, representing nearly 1 in every 12 discharges. Women made up the majority of both total and arthritis discharges, 59.3% and 70.5%, respectively.

[1] Inpatient data from all nonfederal licensed hospitals in the state and Medicare data on West Virginia residents hospitalized in out-of-state hospitals. Up to nine diagnoses (one principal and eight secondary) are recorded.
[2] http://www.hcawv.org/DataAndPublic/Data.htm

Of the 23,444 discharges having an arthritis diagnosis, 2,936 (12.5%) had a diagnosis of rheumatoid arthritis and 20,508 (87.5%) had an osteoarthritis diagnosis. Women were even more likely than men to have a rheumatoid arthritis diagnosis (75% vs. 25%) than an osteoarthritis diagnosis (70% vs. 30%). The graphic to the right illustrates the distribution of discharges by gender and type of arthritis diagnosis.

Distribution of Total, Osteoarthritis, and Rheumatoid Arthritis Discharges by Gender
West Virginia Inpatient Hospital Discharge Records, 2003

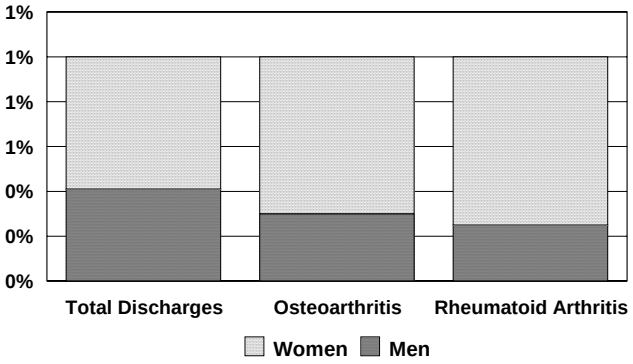


Table 2. Prevalence (%) of Arthritis-Related Limitations among Adults
West Virginia Behavioral Risk Factor Surveillance System, 2003

Characteristic	Arthritis or joint symptoms limit usual activities *			Arthritis or joint symptoms affect place of work, type of work, or amount of work **		
	# Resp.	%	95% CI	# Resp.	%	95% CI
TOTAL	1,992	36.3	(34.0-38.7)	1,405	31.6	(28.8-34.3)
Sex						
Males	756	35.0	(31.3-38.7)	573	32.4	(28.2-36.7)
Females	1,236	37.5	(34.5-40.4)	832	30.8	(27.3-34.2)
Age						
18-24	56	21.7	(9.8-33.7)	56	21.2	(9.5-32.8)
25-34	192	28.2	(21.1-35.4)	193	30.7	(23.4-38.0)
35-44	270	37.7	(31.4-44.1)	270	31.9	(25.8-38.1)
45-54	436	36.5	(31.6-41.4)	432	33.1	(28.3-38.0)
55-64	454	42.7	(37.7-47.8)	454	33.3	(28.5-38.0)
65+	579	37.8	(33.6-42.1)	--	--	--
Education						
Less than H.S.	447	49.7	(44.5-55.0)	244	50.3	(43.0-57.6)
H.S. or G.E.D.	791	36.0	(32.3-39.7)	570	34.3	(29.9-38.7)
Some Post-H.S.	434	30.3	(25.5-35.0)	332	23.0	(18.1-28.0)
College Graduate	318	26.0	(20.8-31.2)	259	16.9	(11.9-21.9)
Income						
Less than $15,000	377	57.6	(51.8-63.4)	236	55.1	(47.7-62.5)
$15,000- 24,999	467	41.5	(36.6-46.4)	293	44.0	(37.6-50.4)
$25,000- 34,999	262	30.1	(24.0-36.2)	194	31.3	(23.8-38.8)
$35,000- 49,999	269	27.2	(21.1-33.2)	218	23.2	(16.7-29.8)
$50,000- 74,999	202	26.4	(19.6-33.2)	186	15.3	(9.9-20.8)
$75,000+	141	17.6	(11.2-24.0)	134	11.9	(6.2-17.5)

* Among adults who reported three months of joint pain or diagnosis of arthritis by a doctor or health care professional
** Among adults aged 18 to 64

WEST VIRGINIA ARTHRITIS COALITION. While the focus of the medical community is on treating arthritis in the individual patient, the public health approach targets the entire population. In order to impact the burden of arthritis in West Virginia, further definition of the problem in the state is of highest priority, i.e., identifying the needs of those residents who suffer from, or are at risk for, arthritis. Awareness of the condition and the fact that prevention strategies do exist, e.g., weight control, physical activity, injury prevention in sports and the workplace, and protection from tick bites and the potential for Lyme disease, must be emphasized, both to the general public and to health care providers. The importance of early diagnosis must also be stressed, for it is estimated that 200,000 people nationwide do not see a doctor even when arthritis is limiting their usual activities. To this end, the West Virginia Bureau for Public Health and the Arthritis Foundation, Ohio River Valley Chapter, are collaborating in the development of the West Virginia Arthritis Coalition. This statewide council, which held its first meeting in February 2005, is open to all organizations and individuals that are committed to improving the quality of life for people with arthritis. The coalition will initially focus on three primary areas: public awareness of arthritis, defining the burden of arthritis in the state, and educating primary care practitioners. For further information, contact Germaine Weis with the Bureau for Public Health, Office of Epidemiology and Health Promotion, at (304) 558-0644 or germaineweis@wvdhhr.org.

Appendix A
Prevalence (%) of Arthritis and Other Rheumatic Conditions by County
WVBRFSS 1999, 2001, 2003

County	%	Rank*	County	%	Rank*
Barbour	36.4	12	Pendleton	28.0	31
Berkeley	27.4	33	Pleasants	36.0	15
Boone	37.7	8	Pocahontas	28.0	31
Braxton	32.1	25	Preston	38.6	7
Brooke	30.0	28	Putnam	24.6	35
Cabell	37.1	9	Raleigh	36.9	10
Calhoun	36.4	13	Randolph	31.4	26
Clay	36.4	13	Ritchie	39.9	4
Doddridge	39.9	4	Roane	36.4	13
Fayette	35.3	17	Summers	38.7	6
Gilmer	36.4	13	Taylor	36.4	12
Grant	34.3	19	Tucker	38.6	7
Greenbrier	38.7	6	Tyler	36.0	15
Hampshire	30.2	27	Upshur	33.0	23
Hancock	26.1	34	Wayne	33.3	22
Hardy	28.0	31	Webster	32.1	25
Harrison	34.2	20	Wetzel	36.0	15
Jackson	36.4	14	Wirt	36.4	14
Jefferson	28.5	30	Wood	35.0	18
Kanawha	27.9	32	Wyoming	36.4	11
Lewis	39.9	4	**Total WV**	**33.5**	
Lincoln	37.7	8	**Total US**	**23.0**	
Logan	40.7	3			
McDowell	48.1	1			
Marion	33.5	21			
Marshall	29.0	29			
Mason	38.9	5			
Mercer	35.7	16			
Mineral	34.3	19			
Mingo	43.6	2			
Monongalia	18.7	36			
Monroe	38.7	6			
Morgan	30.2	27			
Nicholas	32.1	25			
Ohio	32.4	24			

Note: The data from counties sharing the same rank were combined due to low sample sizes. Aggregated sample sizes were large enough for 24 of the 55 counties to stand alone. The data from the remaining 31 counties were combined into 12 groupings of counties. Each county within a grouping shares the same prevalence.
*Rates are rounded to the nearest tenth; ranks were determined before rounding.